February 3, 2017

<u>**Ex Parte**</u>

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

   Re: *Universal Service Reform – Mobility Fund*, WT Docket No. 10-208

Dear Ms. Dortch:

      On February 1, 2017, Joby Fortson and Tom Jenkins of Nielsen Holdings plc ("Nielsen") and Elizabeth Uzelac and I from Harris, Wiltshire & Grannis LLP met with Jim Schlichting, Senior Deputy Chief of the Wireless Telecommunications Bureau, Mark Montano and Rita Cookmeyer of the Wireless Telecommunications Bureau, and Alexander Minard of the Wireline Competition Bureau. Mr. Jenkins participated by telephone. In that meeting, Nielsen discussed the attached presentation.

      Should you have any questions, please communicate with me at (202) 730-1311 or jveach@hwglaw.com.

Sincerely,

Julie A. Veach
Counsel to Nielsen Holdings plc

cc: Jim Schlichting
       Mark Montano
       Rita Cookmeyer
       Alexander Minard

nielsen

CONSUMER MOBILE COVERAGE

REAL WORLD MOBILE NETWORK COVERAGE

MEASURED BY CONSUMERS 24X7

February 2017

4 WAYS TO MEASURE MOBILE
3 USED BY NIELSEN TODAY

Active/Scripted Testing

User or Testing company actively tests the network. Performs predefined tasks.

Upload/Download/Voice Calls – Attempt to simulate consumer behavior and mobile experience. Fixed file sizes, types of files and test scripts.
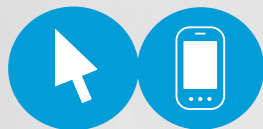
Passive/Unscripted Testing

Results are based on what consumers do on their own for all calls, data uploads/downloads, wifi connections, and apps.

No scripts used. Only real results from actual consumers.

Drive Test

Advantages:
Voice and data
Identical tests
Ultra-detailed metrics
Controlled/repeated area

Disadvantages:
2x to 3x per year
Limited scripts/tests
1 device per operator
Limited time of day
Limited locations
Limited operators

User Activated

CLICK: Begin Test Now

Advantages:
Anywhere user desires
Anytime desired
Multiple devices

Disadvantages
Large file sizes (data use)
No/limited app results
No voice results
Low quantity of results
Operators can identify

Background Activated

Automatically Test Periodically

Advantages:
Collects everywhere
Collects anytime
Controlled tests (same)
Multiple devices

Disadvantages
Med/large files (data use)
No/limited app results
No voice results
Operators can identify

Consumer Uses Device Normally

Advantages:
Actual consumer experience
Collection 24x7 (billions of points)
All applications collected
Speed/throughput
Voice collection (inc. VoLTE)
Coverage
Collects everywhere/location
Multiple devices
Minimal extra data use
All operators
Operators can't identify

Disadvantages
No controlled tests
Tests not standardized
Less detailed metrics

NIELSEN MOBILE PERFORMANCE

Passive/Unscripted Testing

- Passive measurement of the mobile consumer's actual experience, 24/7
    - More than 70,000 panelists and more than 500,000,000 real consumer experience events and 100,000,000 hours of recording network coverage reported every quarter across the US.
    - Reported data reflect when, where and how consumers use their devices.
    - Measures:
        - Coverage (24x7) of all technologies (2G/3G/4G and No Service)
        - Signal strength
        - Data speeds
        - Time of day and device location
   - Thorough quality control processes ensure the most accurate results

NIELSEN MOBILE PERFORMANCE

How can NMP passive/unscripted data be used?

- Nielsen Mobile Performance can:
    - Reflect presence or lack of LTE in any area of the US based on parameters of the customer's choosing (e.g., signal strength, data speeds)
    - Report for any operator or group of operators
    - Report at any level of granularity down to 5 meters (e.g., county, zip code, census block, 100M, 50M)
    - Report timely, up-to-date results
- Results are available in aggregate or by carrier. Different carriers have LTE coverage gaps in different locations.

# NATIONWIDE RESULTS – EVERYWHERE CONSUMERS GO
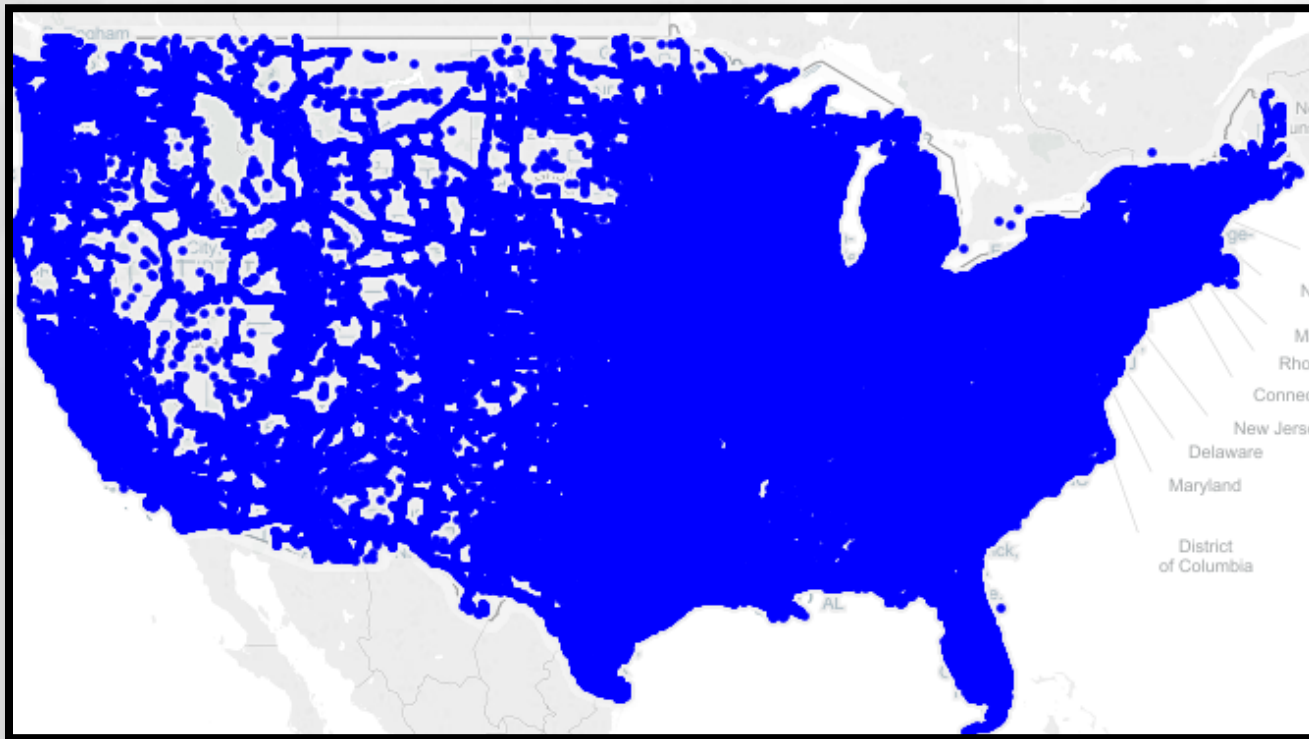
Nielsen Mobile Performance results are available in the areas shown in blue. And, if results are not already available in a particular neighborhood, Nielsen can initiate the collection of data for <u>any public location</u> in the US within 7 days.
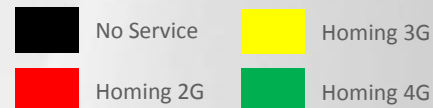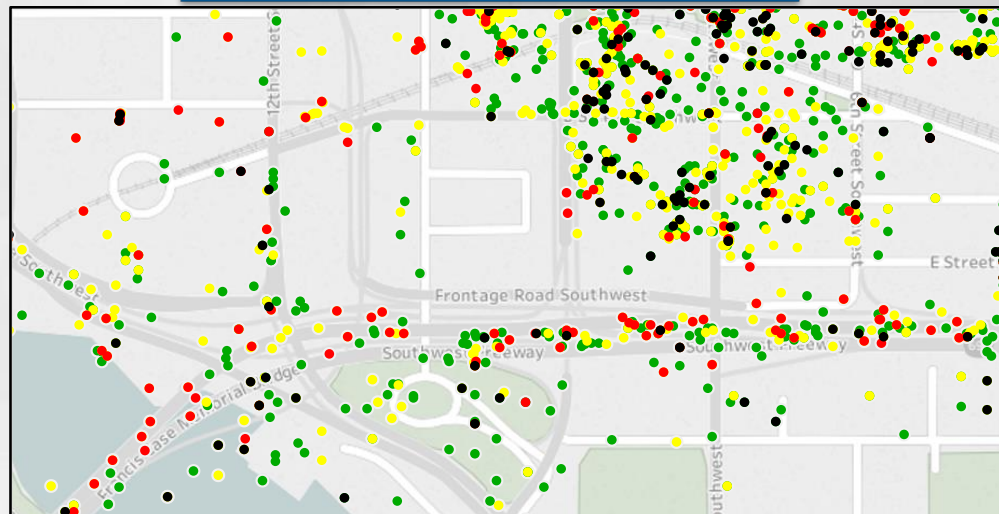
LOCAL AND HYPER-LOCAL RESULTS
Urban Area: Washington, DC

% LTE Service Results By Zip Code
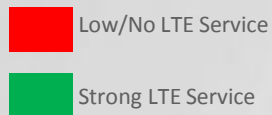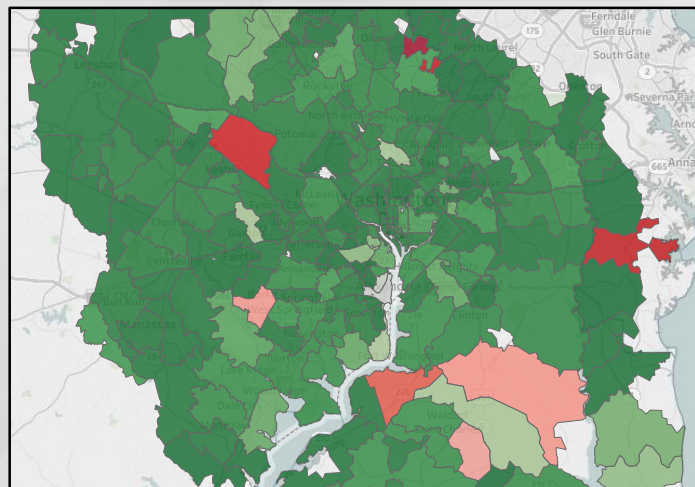
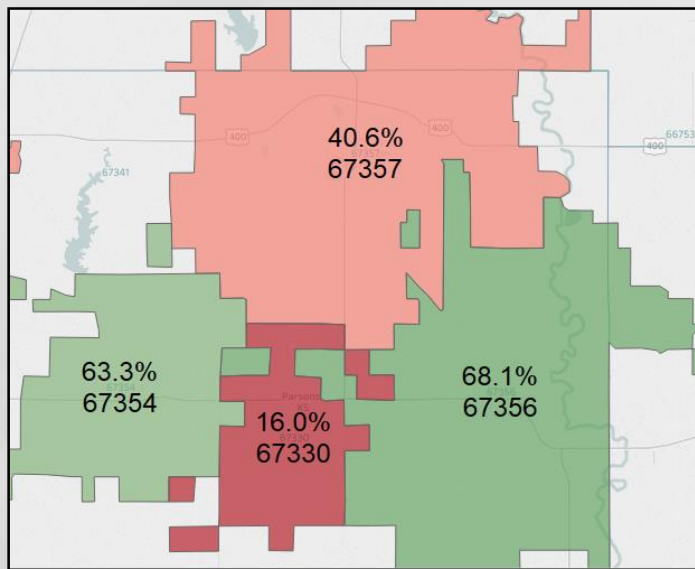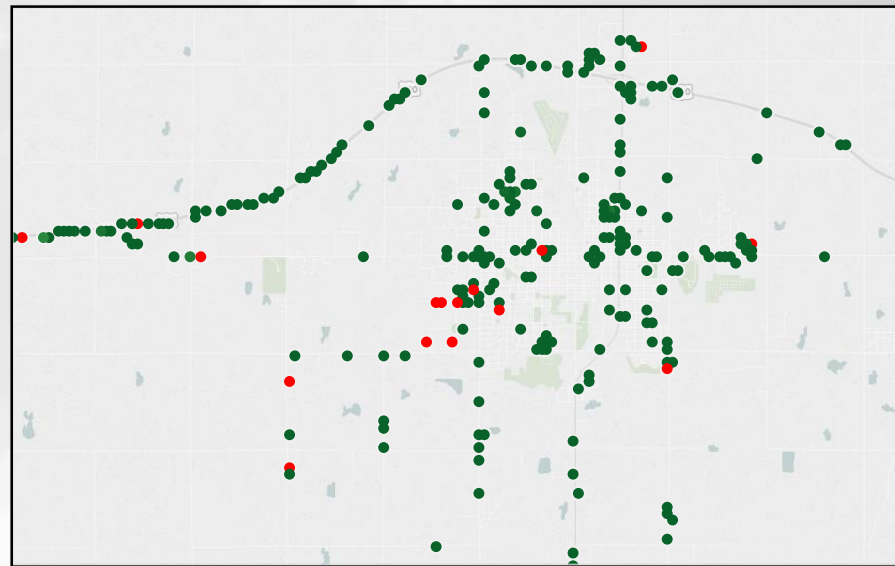Exact locations where consumers lost and gained coverage

Low/No LTE Service

Strong LTE Service

No Service
Homing 3G
Homing 2G
Homing 4G

LOCAL AND HYPER-LOCAL RESULTS

Rural Area: Parsons, KS

% LTE Service Results By Zip Code

Results at 100M granularity (Can provide to exact GPS detail)

Low/No LTE Service

Strong LTE Service

40.6% 67357

63.3% 67354

68.1% 67356

16.0% 67330

nielsen

AN UNCOMMON SENSE
OF THE CONSUMER™

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